

**WHAT IS CLAIMED IS:**

1. A method for screening for a test compound selected from the group consisting of trisubstituted triazines and agents that  
5 interact with prohibitin or mitochondrial ATPase to determine if the test compound is one that inhibits or stimulates pigmentation comprising:

a. determining the amount of melanin or tyrosinase in cells or extracts of cells;

10

b. treating the cells with a test compound; and

c. determining the amount of melanin or tyrosinase in the treated cells or extracts of cells;

15

d. wherein a change in the amount of melanin or tyrosinase in the cells or the extract of cells in the presence of the test compound as compared to the absence of the test compound indicates that the test compound is one that affects pigmentation.

20

2. The method according to claim 1 wherein the amount of melanin in the cells or the extract of cells in the presence of the test compound increases, indicating that the compound is a stimulator of pigmentation.

3. The method according to claim 1 wherein the amount of melanin in the cells or the extract of cells in the presence of the

test compound decreases, indicating that the compound is an inhibitor of pigmentation.

4. A method for decreasing pigmentation in a subject, comprising administering to the subject an effective amount of at least one trisubstituted triazine compound that inhibits pigmentation.

5. The method according to claim 4 comprising further administering to the subject a protein kinase A inhibitor.

6. A method for increasing pigmentation in a subject comprising administering to the subject an effective amount of at least one compound selected from the group consisting of trisubstituted triazine compounds that stimulate pigmentation, oligomycin and derivatives thereof that stimulate pigmentation, and aurovertin and derivatives thereof that stimulate pigmentation, and compounds that interact with prohibitin.

7. The method according to claim 6 comprising further administering to the subject at least one member selected from the group consisting of cAMP elevating agents, MAP kinase inhibitors, and protein kinase C inhibitors.

8. A method for increasing pigmentation in a subject comprising administering to the subject an effective amount of at least one compound that interacts with mitochondrial ATPase.

9. The method according to claim 8 wherein the at least one compound that interacts with mitochondrial ATPase is selected from

the group consisting of PPA, ADA, oligomycin, and aurovertin, and derivatives thereof that stimulate pigmentation.

10. A composition for increasing pigmentation comprising an effective amount of at least one compound that interacts with  
5 mitochondrial ATPase in a pharmaceutically or cosmetically acceptable carrier.

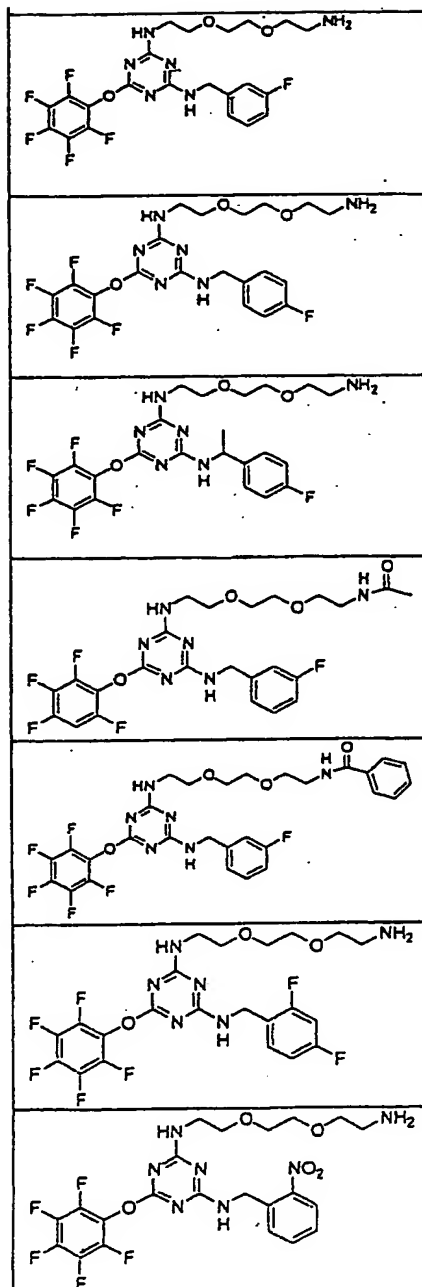
11. The composition according to claim 11 wherein the at least one compound that interacts with mitochondrial ATPase is selected from the group consisting of PPA, ADA, oligomycin, and  
10 aurovertin, and derivatives thereof that stimulate pigmentation.

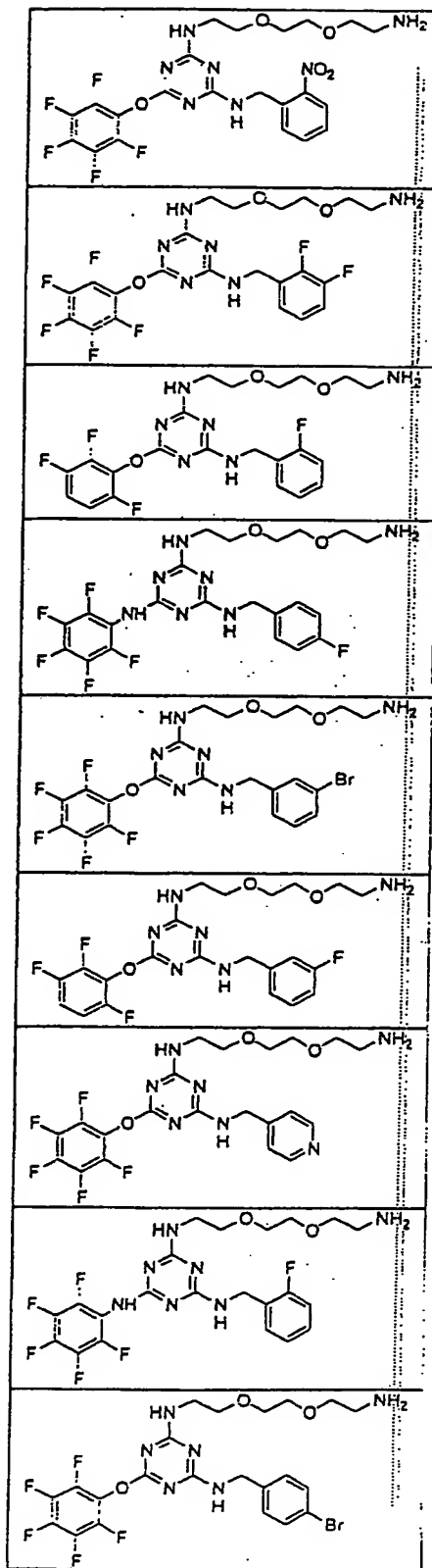
12. A composition for increasing pigmentation comprising an effective amount of at least one compound selected from the group consisting of trisubstituted triazine compounds that stimulate pigmentation, oligomycin, and aurovertin and derivatives thereof  
15 that stimulate pigmentation, in a pharmaceutically or cosmetically acceptable carrier.

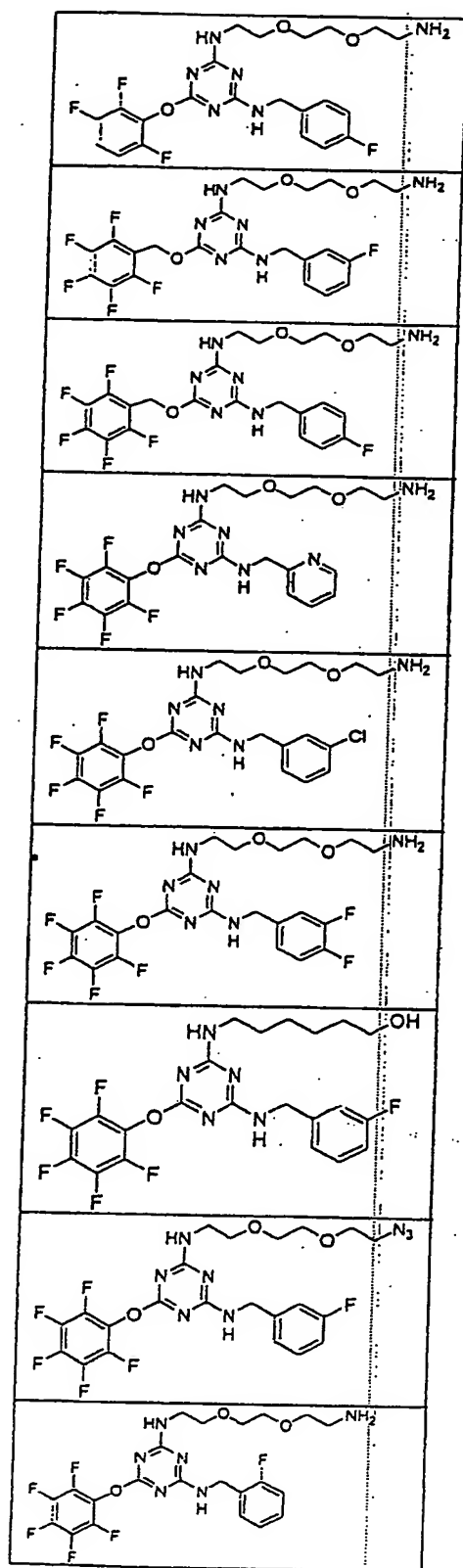
13. The composition according to claim 12 further including at least one member selected from the group consisting of cAMP elevating agents, MAP kinase inhibitors, and protein kinase C  
20 inhibitors.

14. The composition according to claim 12 further including a "self-tanning" compound.

15.       The composition according to claim 12 wherein the trisubstituted triazine compound is selected from the group consisting of







16. A method for screening for trisubstituted triazine compounds that affect pigmentation comprising:

- a. identifying a trisubstituted triazine compound that affects pigmentation;
- b. contacting a protein with the trisubstituted triazine compound and determining if the protein interacts with the trisubstituted triazine;
- c. if the protein interacts with the trisubstituted triazine compound, using the protein as a target for other compounds that interact with the protein to determine if the other compounds also affect pigmentation.

17. The method according to claim 16 wherein the protein is prohibitin or a compound that binds with prohibitin.

18. A method for screening for trisubstituted triazines that affect prohibitin or molecules that bind to prohibitin comprising: contacting prohibitin or a molecule that binds to prohibitin and determining if the prohibitin or molecule that binds to prohibitin interacts with the trisubstituted triazine.

19. A method for screening compounds to determine if the compounds affect pigmentation comprising:

- a. incubating a compound to be tested with mitochondrial ATPase;
- b. determining if the compound binds to ATPase; and



c. if the compound binds to ATPase, the compound is one which affects pigmentation.

20. The method according to claim 19 wherein the mitochondrial ATPase is in a form selected from an alpha, beta, or  
5 gamma subunit.

21. The method according to claim 19 wherein the compound to be tested is immobilized on a substrate.

22. The method according to claim 19 wherein the compound to be tested is tagged with a marker selected from the group  
10 consisting of fluorescent dyes, enzymes, and radiolabels.

23. The method according to claim 19 wherein binding to mitochondrial ATPase is determined by surface plasmon resonance.

24. A method for synthesizing a library of trisubstituted triazines comprising preparing three building blocks separately,  
15 and then assembling the building blocks by orthogonal reaction.

25. The method according to claim 24 wherein the building blocks comprise:

a. a primary amine of the formula  $RNH_2$ , wherein R is selected from the group consisting of substituted or unsubstituted  
20 alkyl, substituted or unsubstituted alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted aryl, substituted or unsubstituted arylalkyl, and substituted or unsubstituted heteroaryl groups;

b.  $R_2NH$ ,  $R_2OH$ , or  $R_2SH$ , wherein  $R_2$  is selected from the group consisting of substituted or unsubstituted alkyl, substituted or unsubstituted alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted aryl, substituted or unsubstituted arylalkyl, and substituted or unsubstituted heteroaryl groups; and

c.  $R_3R_3NH$ ,  $R_3SH$ , wherein  $R_3$  is selected from the group consisting of substituted or unsubstituted alkyl, substituted or unsubstituted alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted aryl, substituted or unsubstituted arylalkyl, and substituted or unsubstituted heteroaryl groups.